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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,093	01/03/2000	DAVID F. SORRELLS	1744.0260001	7306

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EXAMINER
CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/476,093	SORRELLS ET AL.	
	Examiner	Art Unit	
	Charles Chow	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 12-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 12-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/3/2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7,9,10* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Detailed Action

Priority

1. It is acknowledged that applicants claim provisional priority from document 60/116, 847, filed on 1/22/1999.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US 5,790,587) in view of Baker (US 4,045,740).

Regarding **claim 1**, Smith et al. (also as Smith in below) discloses a method of communicating comprising the steps of selecting a radio frequency band from the electro-magnetic EM spectrum as a band of interest. Because Smith discloses the communication system having selectable frequency bands and selectable modes for user interest (abstract, figure in cover page, Fig. 9-13, Fig. 14/Fig. 15; col. 1, lines 22-25; col. 2, line 46 to col. 4, line 5), with channel/frequency selection, as shown in Fig. 8. Smith discloses a receiver using a single frequency synthesizer 721 and band select 719 for demodulation (col. 4, lines 46-28; col. 18, lines 4-67).

Beside, Smith discloses the decoder (col. 15, lines 51-58); the monitoring of one or more single frequency in a frequency bands for a repeating demodulation process for each frequency/channel (abstract, col. 18, lines 29-50; col. 15, lines 55-67; col. 18, lines 46-67).

Smith discloses the selecting a channel within said band of interest as a channel/band combination. Because Smith discloses the channel and band combination as shown in Fig. 8, col. 14, lines 38-52).

Smith disclose causing an input filter device to filter the EM spectrum thereby passing said channel/band combination; and the down converting said channel/band combination to create a down converted signal. Because Smith discloses the selection of input filter BPF 714/715 via switch 709/710 for down conversion (as shown in figure in cover page; col. 18, lines 4-27).

Smith discloses the down converting said channel/band combination to create a down converted signal, utilizing multiplier 720, frequency synthesizer 721 for creating down converted signal 740 from IF/demodulator 730 (Fig. 14, col. 18, lines 28-67).

Smith does not clearly indicate the causing an output filter to filter said down converted signal to create a filtered down converted signal.

Baker teaches the method for optimizing the bandwidth in a receiver for the incoming data with varying data rate (abstract, Fig. 2; col. 4, lines 12-59), having output tunable BPF filters

46/47 for filtering the down converted IF signal from mixer 41, with switch 50. Baker teaches the technique for improved demodulation with optimized bandwidth for the incoming data, such that information can be demodulated for various data rate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Smith, and to include Baker's tunable BPF 46/47, such that the demodulation could be improved by optimizing the demodulation bandwidth for adapting to incoming data rate.

Regarding **claim 2**, Smith discloses the receiving channel/band combination as shown above. Smith discloses the aliasing signal from having an aliasing frequency fn (from frequency synthesizer 721) being a function of a clock signal (the clock reference frequency signal 501 in Fig. 11).

Regarding **claim 3**, referring to Smith above for the intermediate frequency IF signal from down conversion.

Regarding **claim 4**, referring to Smith above for the down converted signal is a base band signal. Because Smith discloses the down converted IF signal is a base band signal for base band demodulation 730 (as shown in col. 18, lines 51-58) .

Regarding **claim 5**, referring to Smith above for the adjusting the clock signal 501 (Fig. 11) utilizing mixer 502 and divide-by N 507 to adjusting the clock signal to produce fs 503, so that the aliasing frequency is suitable for down converting the channel/band combination, by tuning VCO 504 (col. 16, line 1-13).

Regarding **claim 6**, referring to Smith's IF/demodulation 730 for the decoding said filtered down converted to create a decoded down converted signal.

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Baker, and further in view of Sawada et al. (US 5,710,992).

In the above, it does not clearly indicate the controller.

Regarding **claim 7**, Sawada et al. (also as Sawada in below) teaches the controller 130 of a scanning receiver for searching active channels from plurality of bands (as shown in title, abstract, Fig. 1, col. 3, lines 33-62; col. 4, lines 10-11; col. 4, lines 27-41). Sawada teaches the controller for controlling frequency synthesizer 118/VCO 124, for mixer 106, utilizing FREQ signal, chain memory 132, and channel memory 140. Sawada teaches the efficient, simplified method for search the active frequency (col. 2, line 49 to col. 3, line 5), by utilizing the controller to retrieve the identified chain number. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Smith above, and to include Sawada's controller for efficient active channel search, such that the system could efficiently search for the active channel for obtaining the demodulated the information.

Regarding **claim 8**, referring to claims 1, 6 above for the decoder to generate a decode output signal.

Regarding **claim 9**, referring to Smith or Sawada for the voltage controlled oscillator.

4. Claims 12-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Baker, Sawada, as applied to claim 7 above, and further in view of Kurata (US 4,016,366).

In the above, it does not clearly indicate the controller issues a third command for decoder operating according to the third command signal.

Regarding **claim 12**, Kurata teaches the switch 23 for selecting of the FM detectors 20-22 (Fig. 6; col. 4, lines 3-55) for the different bandwidth of the intermediate frequency, to the demodulator 9, for the multi-channel composite signal (col. 1, lines 4-9). The switch 23 is controlled by the signal 11 from the discriminator 10, such that the demodulation is according to the control signal for selection one of the FM detector. Kurata teaches the efficient technique for demodulating/detecting composite signal of various bandwidth by selecting different detector, to avoid interference. (col. 2, lines 18-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Smith above, and to include Kurata's control signal for selecting a detector, such that the system could efficiently demodulating of the composite signal, to avoid interference.

Regarding **claim 13**, referring to claim 1 above for: the specifying/selecting one or more frequency bands from EM spectrum of interest; the specifying/selecting channel/band combination of interest; the causing input filter to operated with the monitored channel/band combination for filtering an input signal within monitored channel/band combination; the down converting; the monitoring and the output filtering.

Regarding **claim 14**, referring to claims claims 1, 2 above for: the receiving said filtered signal; the aliasing said filtered signal; the outputting down converted signal.

Regarding **claim 15**, referring to claims 1, 5 above for: the method for adjusting the clock so that the aliasing frequency is suitable for down converting.

Regarding **claim 16**, referring to claims 1, 12 above for the selecting a decoder/detector to create a decoded down converted signal.

Regarding **claim 17**, referring to Smith's monitoring and the steps in his claims (col. 15, lines 55-67; col. 18, lines 29-45; col. 18, lines 46-67) for the monitoring, therefore for the repeating the monitoring of each channel, for the receiving spectrum signal; a frequency synthesizer outputting a programmable signal, a switch selected filter coupling to the incoming signal, a multiplier for down conversion; and Baker's output filtering of the down converted IF signal for demodulation, for the claimed repeating steps (3) through (7).

Regarding **claim 18**, referring to claims 1, 3 above for the intermediate frequency.

Regarding **claim 19**, referring to claims 1, 4 above for the base band signal.

Regarding **claim 20**, referring to claims 1 above for: the system comprising one or more input filters to generate more filtered signal; a universal frequency translator from Smith's multiplier 720 above; an output filter from Baker above.

Regarding **claim 21**, referring to claim 1 above, Smith discloses a generated control signal 509 (Fig. 11, col. 18, lines 29-51) for controlling the frequency synthesizer 721 for the universal translator (720).

Regarding **claim 22**, referring to claims 1, 5, 21 for the control signal generator is a voltage control oscillator, from Smith's VOC 504 for sending signal to divide-by N 507 for controlling the synthesizer frequency.

Regarding **claim 23**, referring to claims 1, 6 above for the decoder for decoding down converted signal to generate a decoded output signal.

Regarding **claim 24**, referring to claims 1, 13, 17, 21, 22 above for the first command through fifth command for controlling of: the input filter module, the universal frequency translator; the control signal generator, the output tunable filter, the decoder/detector selection.

Regarding **claim 25**, referring to claims 1, 19 above for the base band signal.

Regarding **claim 26**, referring to claims 1, 18 above for the down converted intermediate frequency signal.

Conclusion

5. In the above disclosures, Smith discloses the communication system having selectable frequency bands and selectable modes, with channel/frequency selection, as shown in Fig. 8. Smith discloses a receiver using a single frequency synthesizer 721, band select 719 for demodulation. Smith discloses the decoder, the monitoring of one or more single frequency in a frequency bands for a repeating demodulation process. Smith discloses the selecting a channel within said band of interest as a channel/band combination. Because Smith discloses the channel and band combination. Smith disclose causing an input filter device to filter the EM spectrum thereby passing said channel/band combination; and the down converting said channel/band combination to create a down converted signal. Because Smith discloses the selection of input filter BPF 714/715via switch 709/710 for down conversion. Smith discloses the down converting said channel/band combination to create a down converted signal, utilizing multiplier 720, frequency synthesizer 721 for creating down converted signal 740 from IF/demodulator 730.

Baker teaches the method for optimizing the bandwidth in a receiver for the incoming data with varying data rate, having output tunable BPF filters 46/47 for filtering the down converted IF signal from mixer 41, with switch 50. Baker teaches the technique for improved demodulation with optimized bandwidth for the incoming data, such that information can be demodulated for various data rate.

Sawada teaches the controller 130 of a scanning receiver for searching active channels from plurality of bands. Sawada teaches the controller for controlling frequency synthesizer 118/VCO 124, for mixer 106, utilizing FREQ signal, chain memory 132, and channel memory 140. Sawada teaches the efficient, simplified method for search the active frequency by utilizing the controller to retrieve the identified chain number.

Kurate teaches the switch 23 for selecting of the FM detectors 20-22 for the different bandwidth of the intermediate frequency, to the demodulator 9, for the multi-channel composite signal. The switch 23 is controlled by the signal 11 from the discriminator 10, such that the demodulation is according to the control signal for selection one of the FM detector. Kurata teaches the efficient technique for demodulating/detecting composite signal of various bandwidth by selecting different detector, to avoid interference.

6. The cited pertinent prior arts are listed below:

   A. US 4,115,737, September 1978, Hongu et al. teaches the multi-tuner having BPF 12L/12H, single mixer 15 and single oscillator 16 fro universal down conversion (abstract, figure in cover page; col. 1, lines 8-19; col. 1, line 45 to col. 2, line 59; col. 9, lines 28-40).

   B. US 3,614,627, October 1971, Runyan et al. teaches the FM demodulation system for

demodulating any carrier signal of any deviation with plurality of band pass filters , VCO 46 (Fig. 1-3, abstract).

C. US 3,940,697, February 1976, Morgan teaches *the multiple band radio having universal down conversion using adaptive mixer 14, scanning local oscillator 16 and rf amplifier band 22A-22C (abstract, figure in cover page, Fig. 1-4; col. 3,lines 29-41; col. 3, lines 9-28).*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)-305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow

August 06, 2003.